09/711,782

[redacted]

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=> s clear? (3a) solution and disrupted biological material
L1 5 CLEAR? (3A) SOLUTION AND DISRUPTED BIOLOGICAL MATERIAL

=> d l1 bib abs 1-5

L1 ANSWER 1 OF 5 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 2001:514789 BIOSIS
DN PREV200100514789
TI Kits for cell concentration and lysate clearance using paramagnetic particles.
AU Bitner, Rex M. [Inventor]; Smith, Craig E. [Inventor]; White, Douglas H. [Inventor]; Butler, Braeden L. [Inventor]; Sankbeil, Jacqui [Inventor, Reprint author]
CS Edgerton, WI, USA
ASSIGNEE: Promega Corporation
PI US 6284470 September 04, 2001
SO Official Gazette of the United States Patent and Trademark Office Patents, (Sep. 4, 2001) Vol. 1250, No. 1. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DT Patent
LA English
ED Entered STN: 7 Nov 2001
Last Updated on STN: 23 Feb 2002
AB Methods are disclosed for using paramagnetic particles to concentrate or harvest cells. Methods are also disclosed for **clearing** a **solution** of **disrupted biological material**, such as a lysate of cells or a homogenate of mammalian tissue. Methods are also disclosed for using paramagnetic particles to isolate target nucleic acids, such as RNA or DNA, from a **solution cleared** of **disrupted biological material** using the same type or a different type of paramagnetic particle. Kits are also disclosed for use with the various methods of the present invention. Nucleic acids isolated according to the present methods and using the present kits are suitable for immediate use in downstream processing, without further purification.

09567863

L1 ANSWER 2 OF 5 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2002-537326 [57] WPIDS
DNC C2002-152316
TI **Clearing solution** of disrupted material, by providing silanized silica matrix covalently attached to several silane ligands, and combining matrix with material, target nucleic acid and chaotropic salt to form a complex.
DC B04 D16
IN BITNER, R M; FLEMMING, R G; KOLLER, S C; SIMPSON, D J
PA (PROM-N) PROMEGA CORP
CYC 96
PI WO 2002038758 A1 20020516 (200257)* EN 48p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2002025942 A 20020521 (200260)
EP 1341910 A1 20030910 (200367) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
ADT WO 2002038758 A1 WO 2001-US46710 20011108; AU 2002025942 A AU 2002-25942 20011108; EP 1341910 A1 EP 2001-993684 20011108, WO 2001-US46710 20011108
FDT AU 2002025942 A Based on WO 2002038758; EP 1341910 A1 Based on WO 2002038758
PRAI US 2000-711782 20001113
AN 2002-537326 [57] WPIDS
AB WO 200238758 A UPAB: 20020906
NOVELTY - **Clearing** a **solution** of **disrupted biological material** (BM), comprising providing first silanized silica matrix having a silica solid phase with silane ligands covalently attached to it, where each ligand has neutral charge in a solution, and combining matrix with target nucleic acid, BM and chaotropic salt in the solution to promote selective adsorption of BM to matrix, to form a complex, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a kit comprising, in a single container, several silanized silica magnetic particles which comprises a silica solid phase with at least one silane ligand covalently attached to the surface of each particle.

USE - The method is useful for **clearing** a **solution** of a bacterial cell lysate or disrupted plant matter. The method is also useful for isolating a target nucleic acid such as plasmid DNA, genomic DNA, total RNA or a double-stranded linear DNA with a molecular weight of 25-60000 base pairs, from a nucleic acid adsorption solution (pH 8) comprising a vegetable oil at a concentration of low molecular weight alcohol sufficient to promote adsorption of the target nucleic acid to the second silanized silica matrix, and 0.2-1.2 M of chaotropic salt such as guanidine hydrochloride or guanidine thiocyanate. The adsorption solution comprises the target nucleic acid from an agarose gel slice and the agarose gel. The method further comprises washing the complex in a wash solution (pH 8) having a concentration of 30 % of a low molecular weight alcohol, and combining the complex with an elution solution of pH 8, especially a buffer of 9 to desorb the target nucleic acid from the complex. (All claimed). The method is also useful for isolating a target nucleic acid such as mRNA, RNA/DNA hybrids, amplified nucleic acids, non-target nucleic acids and non-target components of bacteria, animal tissue, blood cells, or other plant material from contaminants including proteins, lipids, cellular debris or non-target nucleic acids.

ADVANTAGE - The method provides efficient **clearing** of a **solution** of **disrupted biological material** and in isolating both low molecular weight DNA molecules

(i.e. less than 150 base pairs) and larger molecular weight DNA.
Dwg.0/4

L1 ANSWER 3 OF 5 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2001-061227 [07] WPIDS
CR 2000-061985 [05]
DNC C2001-016883
TI Rapid and efficient cell harvesting, lysate clearance, homogenate clearance or nucleic acid isolation, without the need for filtration or centrifugation, using magnetic particles.
DC B04 C07 D16
IN BITNER, R M; BUTLER, B L; SANKBEIL, J; SMITH, C E; WHITE, D H
PA (PROM-N) PROMEGA CORP
CYC 88
PI WO 2000070040 A1 20001123 (200107)* EN 49p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW
AU 2000023981 A 20001205 (200113)
US 6284470 B1 20010904 (200154)
EP 1179058 A1 20020213 (200219) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 2002543835 W 20021224 (200313) 49p
ADT WO 2000070040 A1 WO 1999-US31207 19991230; AU 2000023981 A AU 2000-23981 19991230; US 6284470 B1 CIP of US 1998-64449 19980422, Provisional US 1999-134156P 19990514, Div ex US 1999-475958 19991230, US 2000-645133 20000824; EP 1179058 A1 EP 1999-967755 19991230, WO 1999-US31207 19991230; JP 2002543835 W WO 1999-US31207 19991230, JP 2000-618446 19991230
FDT AU 2000023981 A Based on WO 2000070040; US 6284470 B1 CIP of US 6194562; EP 1179058 A1 Based on WO 2000070040; JP 2002543835 W Based on WO 2000070040
PRAI US 1999-134156P 19990514; US 1998-64449 19980422; US 1999-475958 19991230; US 2000-645133 20000824
AN 2001-061227 [07] WPIDS
CR 2000-061985 [05]
AB WO 200070040 A UPAB: 20030224
NOVELTY - Magnetically responsive particles are used (i) to harvest or concentrate cells or biological tissue, (ii) to clear lysates or homogenates of such cells or tissue, or (ii) to isolate target nucleic acids (TNAs) from non-target material in a cell lysate.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for: (A) using magnetic particles (MPs) to concentrate or harvest cells, comprising: (a) combining a solution which contains cells with MPs, under conditions such that the cells form a complex with the MPs; and (b) isolating the complex from the solution by application of magnetic force. (B) **clearing a solution** of **disrupted biological material** (DBM), comprising: (a) providing a solution comprising a DBM; (b) combining the solution with MPs under conditions such that the DBM forms a complex with the MPs; and (c) separating the complex from the solution by application of magnetic force. (C) isolating a TNA from a DBM (which comprises the TNA, a first non-target material and a second non-target material), comprising: (a) combining a solution of the DBM with first MPs under conditions such that the first non-target material forms a first complex with the first MPs; (b) separating the first complex from the solution of DBM by application of magnetic force, forming a **cleared solution** comprising the TNA and the second non-target material; (c) combining the **cleared solution** with second MPs under conditions such that the TNA adsorbs to the second

MPs, forming a second complex; (d) isolating the second complex from the **cleared solution**; (e) washing the second complex by combining the second complex with a wash solution, and separating the second complex from the wash solution by magnetic force; and (f) combining the washed second complex with an elution solution, under conditions such that the target material is desorbed from the second MPs. (D) kit for isolating a TNA from a DBM, comprising: (a) a first container of first MPs with the capacity to form a complex with non-target material in a solution of DBM comprising the non-target material and the TNA; and (b) a second container of second MPs with the capacity to form a complex with the TNA, under solution conditions designed to promote the specific adsorption of the TNA to the second MPs.

ACTIVITY - None given.

MECHANISM OF ACTION - None given.

USE - The processes can be used to harvest cells or to concentrate cells or biological tissue. They can be used to clear lysates or homogenates of cell or tissue debris, and can be used to isolate TNAs, e.g., plasmid DNA, chromosomal DNA or DNA/RNA hybrids.

ADVANTAGE - The processes are rapid and efficient, and are amenable to automation. Labor-intensive steps, e.g., filtration or centrifugation steps, are not required.

Dwg.0/6

L1 ANSWER 4 OF 5 USPATFULL on STN
AN 2001:147681 USPATFULL
TI Kits for cell concentration and lysate clearance using paramagnetic particles
IN Bitner, Rex M., Cedarburg, WI, United States
Smith, Craig E., Oregon, WI, United States
White, Douglas H., Madison, WI, United States
Butler, Braeden L., Madison, WI, United States
Sankbeil, Jacqui, Edgerton, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 6284470 B1 20010904
AI US 2000-645133 20000824 (9)
RLI Division of Ser. No. US 1999-475958, filed on 30 Dec 1999
Continuation-in-part of Ser. No. US 1998-64449, filed on 22 Apr 1998, now patented, Pat. No. US 6194562
PRAI US 1999-134156P 19990514 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Guzo, David
LREP Frenchick, Grady J., King, Karen B.Michael Best & Friedrich LLP
CLMN Number of Claims: 5
ECL Exemplary Claim: 1
DRWN 6 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 1473
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods are disclosed for using paramagnetic particles to concentrate or harvest cells. Methods are also disclosed for **clearing** a **solution** of **disrupted biological material**, such as a lysate of cells or a homogenate of mammalian tissue. Methods are also disclosed for using paramagnetic particles to isolate target nucleic acids, such as RNA or DNA, from a **solution cleared** of **disrupted biological material** using the same type or a different type of paramagnetic particle. Kits are also disclosed for use with the various methods of the present invention. Nucleic acids isolated according to the present methods and using the present kits are suitable for immediate use in downstream processing, without further purification.

09567863

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 5 OF 5 USPATFULL on STN
AN 2001:56107 USPATFULL
TI Method of isolating RNA
IN Ekenberg, Steven J., Mount Horeb, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 6218531 B1 20010417
WO 9859076 19981230
AI US 1999-445944 19991220 (9)
WO 1998-US13180 19980625
19991220 PCT 371 date
19991220 PCT 102(e) date
PRAI US 1997-50719P 19970625 (60)
US 1996-26582P 19960918 (60)
DT Utility
FS Granted
EXNAM Primary Examiner: Horlick, Kenneth R.; Assistant Examiner: Siew, Jeffrey
LREP Michael Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.
CLMN Number of Claims: 16
ECL Exemplary Claim: 1
DRWN 4 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 1454
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a method for isolating RNA from a biological material comprising RNA and contaminants, wherein: the biological material is disrupted in the presence of a chaotropic agent, the resulting lysate is diluted to precipitate out contaminants, and the precipitate is removed from the lysate. RNA is preferably isolated from the resulting cleared lysate, using a silica matrix to bind and then release RNA bound thereto under particular conditions. The present invention also provides a method for isolating RNA from a solution comprising RNA and DNA, wherein: the RNA and DNA are bound to a silica matrix in the presence of at least one binding enhancer, the DNA is digested with DNase, and the RNA fluted therefrom.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 1 OF 2 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2002-537326 [57] WPIDS
DNC C2002-152316
TI **Clearing solution** of disrupted material, by providing **silanized** silica matrix covalently attached to several **silane** ligands, and combining matrix with material, target nucleic acid and chaotropic salt to form a complex.
DC B04 D16
IN BITNER, R M; FLEMMING, R G; KOLLER, S C; SIMPSON, D J
PA (PROM-N) PROMEGA CORP
CYC 96
PI WO 2002038758 A1 20020516 (200257)* EN 48p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2002025942 A 20020521 (200260)
EP 1341910 A1 20030910 (200367) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
ADT WO 2002038758 A1 WO 2001-US46710 20011108; AU 2002025942 A AU 2002-25942 20011108; EP 1341910 A1 EP 2001-993684 20011108, WO 2001-US46710 20011108
FDT AU 2002025942 A Based on WO 2002038758; EP 1341910 A1 Based on WO 2002038758
PRAI US 2000-711782 20001113
AN 2002-537326 [57] WPIDS
AB WO 200238758 A UPAB: 20020906
NOVELTY - **Clearing** a **solution** of **disrupted biological material** (BM), comprising providing first **silanized** silica matrix having a silica solid phase with **silane** ligands covalently attached to it, where each ligand has neutral charge in a solution, and combining matrix with target nucleic acid, BM and chaotropic salt in the solution to promote selective adsorption of BM to matrix, to form a complex, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a kit comprising, in a single container, several **silanized** silica magnetic particles which comprises a silica solid phase with at least one **silane** ligand covalently attached to the surface of each particle.

USE - The method is useful for **clearing** a **solution** of a bacterial cell lysate or disrupted plant matter. The method is also useful for isolating a target nucleic acid such as plasmid DNA, genomic DNA, total RNA or a double-stranded linear DNA with a molecular weight of 25-60000 base pairs, from a nucleic acid adsorption solution (pH 8) comprising a vegetable oil at a concentration of low molecular weight alcohol sufficient to promote adsorption of the target nucleic acid to the second **silanized** silica matrix, and 0.2-1.2 M of chaotropic salt such as guanidine hydrochloride or guanidine thiocyanate. The adsorption solution comprises the target nucleic acid from an agarose gel slice and the agarose gel. The method further comprises washing the complex in a wash solution (pH 8) having a concentration of 30 % of a low molecular weight alcohol, and combining the complex with an elution solution of pH 8, especially a buffer of 9 to desorb the target nucleic acid from the complex. (All claimed). The method is also useful for isolating a target nucleic acid such as mRNA, RNA/DNA hybrids, amplified nucleic acids, non-target nucleic acids and non-target components of bacteria, animal tissue, blood cells, or other plant material from contaminants including proteins, lipids, cellular debris or non-target nucleic acids.

ADVANTAGE - The method provides efficient **clearing** of a **solution** of **disrupted biological material** and in isolating both low molecular weight DNA molecules

(i.e. less than 150 base pairs) and larger molecular weight DNA.
Dwg.0/4

=> d l2 2 bib abs

L2 ANSWER 2 OF 2 USPATFULL on STN
AN 2001:147681 USPATFULL
TI Kits for cell concentration and lysate clearance using paramagnetic particles
IN Bitner, Rex M., Cedarburg, WI, United States
Smith, Craig E., Oregon, WI, United States
White, Douglas H., Madison, WI, United States
Butler, Braeden L., Madison, WI, United States
Sankbeil, Jacqui, Edgerton, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 6284470 B1 20010904
AI US 2000-645133 20000824 (9)
RLI Division of Ser. No. US 1999-475958, filed on 30 Dec 1999
Continuation-in-part of Ser. No. US 1998-64449, filed on 22 Apr 1998, now patented, Pat. No. US 6194562
PRAI US 1999-134156P 19990514 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Guzo, David
LREP Frenchick, Grady J., King, Karen B.Michael Best & Friedrich LLP
CLMN Number of Claims: 5
ECL Exemplary Claim: 1
DRWN 6 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 1473
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods are disclosed for using paramagnetic particles to concentrate or harvest cells. Methods are also disclosed for **clearing** a **solution** of **disrupted biological material**, such as a lysate of cells or a homogenate of mammalian tissue. Methods are also disclosed for using paramagnetic particles to isolate target nucleic acids, such as RNA or DNA, from a **solution cleared** of **disrupted biological material** using the same type or a different type of paramagnetic particle. Kits are also disclosed for use with the various methods of the present invention. Nucleic acids isolated according to the present methods and using the present kits are suitable for immediate use in downstream processing, without further purification.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

09567863

=> d l12 bib abs 1-22

L12 ANSWER 1 OF 22 USPATFULL on STN
AN 2003:294281 USPATFULL
TI Nanoparticles having oligonucleotides attached thereto and uses therefor
IN Park, So-Jung, Austin, TX, UNITED STATES
Taton, Thomas Andrew, Little Canada, MN, UNITED STATES
Mirkin, Chad A., Wilmette, IL, UNITED STATES
PI US 2003207296 A1 20031106
AI US 2002-266983 A1 20021008 (10)
RLI Continuation-in-part of Ser. No. US 2001-8978, filed on 7 Dec 2001, PENDING Continuation-in-part of Ser. No. US 2001-927777, filed on 10 Aug 2001, PENDING Continuation-in-part of Ser. No. US 2001-820279, filed on 28 Mar 2001, PENDING Continuation-in-part of Ser. No. US 2001-760500, filed on 12 Jan 2001, PENDING Continuation-in-part of Ser. No. US 2000-603830, filed on 26 Jun 2000, GRANTED, Pat. No. US 6506564 Continuation-in-part of Ser. No. US 1999-344667, filed on 25 Jun 1999, GRANTED, Pat. No. US 6361944 Continuation-in-part of Ser. No. US 1999-240755, filed on 29 Jan 1999, ABANDONED Continuation-in-part of Ser. No. WO 1997-US12783, filed on 21 Jul 1997, PENDING
PRAI US 2001-327864P 20011009 (60)
US 2000-254418P 20001208 (60)
US 2000-255236P 20001211 (60)
US 2001-282640P 20010409 (60)
US 2000-224631P 20000811 (60)
US 2000-192699P 20000328 (60)
US 2000-254392P 20001208 (60)
US 2000-255235P 20001211 (60)
US 2000-176409P 20000113 (60)
US 2000-213906P 20000626 (60)
US 2000-200161P 20000426 (60)
US 1996-31809P 19960729 (60)
DT Utility
FS APPLICATION
LREP MCDONNELL BOEHNEN HULBERT & BERGHOFF, 300 SOUTH WACKER DRIVE, SUITE 3200, CHICAGO, IL, 60606
CLMN Number of Claims: 677
ECL Exemplary Claim: 1
DRWN 75 Drawing Page(s)
LN.CNT 12981
AB The invention provides methods of detecting a nucleic acid. The methods comprise contacting the nucleic acid with one or more types of particles having oligonucleotides attached thereto. In one embodiment of the method, the oligonucleotides are attached to nanoparticles and have sequences complementary to portions of the sequence of the nucleic acid. A detectable change (preferably a color change) is brought about as a result of the hybridization of the oligonucleotides on the nanoparticles to the nucleic acid. The invention also provides compositions and kits comprising particles. The invention further provides methods of synthesizing unique nanoparticle-oligonucleotide conjugates, the conjugates produced by the methods, and methods of using the conjugates. In addition, the invention provides nanomaterials and nanostructures comprising nanoparticles and methods of nanofabrication utilizing nanoparticles. Finally, the invention provides a method of separating a selected nucleic acid from other nucleic acids.

L12 ANSWER 2 OF 22 USPATFULL on STN
AN 2003:200988 USPATFULL
TI Microdevices for screening biomolecules
IN Wagner, Peter, Belmont, CA, UNITED STATES
Ault-Riche, Dana, Hayward, CA, UNITED STATES

09567863

Nock, Steffen, Redwood City, CA, UNITED STATES
Itin, Christian, Menlo Park, CA, UNITED STATES
Tan, Ming, Danville, CA, UNITED STATES
PI US 2003138973 A1 20030724
AI US 2002-328925 A1 20021223 (10)
RLI Continuation of Ser. No. US 2002-134025, filed on 24 Apr 2002, PENDING Continuation-in-part of Ser. No. US 1999-353554, filed on 14 Jul 1999, PENDING Continuation-in-part of Ser. No. US 1998-115397, filed on 14 Jul 1998, GRANTED, Pat. No. US 6576478
DT Utility
FS APPLICATION
LREP TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
CLMN Number of Claims: 46
ECL Exemplary Claim: 1
DRWN 9 Drawing Page(s)
LN.CNT 2446
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods and devices for the parallel, in vitro screening of biomolecular activity using miniaturized microfabricated devices are provided. The biomolecules immobilized on the surface of the devices of the present invention include proteins, polypeptides, polynucleotides, polysaccharides, phospolipids, and related unnatural polymers of **biological** relevance. These devices are useful drug development, functional proteomics and clinical diagnostics and are preferably used for the parallel screening of families of related proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 3 OF 22 USPATFULL on STN
AN 2003:127030 USPATFULL
TI Nanoparticles having oligonucleotides attached thereto and uses therefor
IN Mirkin, Chad A., Wilmette, IL, UNITED STATES
Letsinger, Robert L., Wilmette, IL, UNITED STATES
Taton, Thomas Andrew, Little Canada, MN, UNITED STATES
Lu, Gang, Mt Prospect, IL, UNITED STATES
PI US 2003087242 A1 20030508
AI US 2001-8978 A1 20011207 (10)
RLI Continuation-in-part of Ser. No. US 2001-927777, filed on 10 Aug 2001, PENDING Continuation-in-part of Ser. No. US 2001-820279, filed on 28 Mar 2001, PENDING Continuation-in-part of Ser. No. US 2001-760500, filed on 12 Jan 2001, PENDING Continuation-in-part of Ser. No. US 2000-603830, filed on 26 Jun 2000, PENDING Continuation-in-part of Ser. No. US 1999-344667, filed on 25 Jun 1999, GRANTED, Pat. No. US 6361944 Continuation-in-part of Ser. No. US 1999-240755, filed on 29 Jan 1999, ABANDONED Continuation-in-part of Ser. No. WO 1997-US12783, filed on 21 Jul 1997, UNKNOWN
PRAI US 1996-31809P 19960729 (60)
US 2000-176409P 20000113 (60)
US 2000-192699P 20000328 (60)
US 2000-200161P 20000426 (60)
US 2000-213906P 20000626 (60)
US 2000-224631P 20000811 (60)
US 2000-254392P 20001208 (60)
US 2000-254418P 20001208 (60)
US 2000-255235P 20001211 (60)
US 2000-255236P 20001211 (60)
US 2001-282640P 20010409 (60)
DT Utility
FS APPLICATION
LREP MCDONNELL BOEHNEN HULBERT & BERGHOFF, 300 SOUTH WACKER DRIVE, SUITE 3200, CHICAGO, IL, 60606

09567863

CLMN Number of Claims: 626
ECL Exemplary Claim: 1
DRWN 71 Drawing Page(s)
LN.CNT 12308
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides methods of detecting a nucleic acid. The methods comprise contacting the nucleic acid with one or more types of particles having oligonucleotides attached thereto. In one embodiment of the method, the oligonucleotides are attached to nanoparticles and have sequences complementary to portions of the sequence of the nucleic acid. A detectable change (preferably a color change) is brought about as a result of the hybridization of the oligonucleotides on the nanoparticles to the nucleic acid. The invention also provides compositions and kits comprising particles. The invention further provides methods of synthesizing unique nanoparticle-oligonucleotide conjugates, the conjugates produced by the methods, and methods of using the conjugates. In addition, the invention provides nanomaterials and nanostructures comprising nanoparticles and methods of nanofabrication utilizing nanoparticles. Finally, the invention provides a method of separating a selected nucleic acid from other nucleic acids.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 4 OF 22 USPATFULL on STN
AN 2003:127016 USPATFULL
TI ELECTRONIC DETECTION OF NUCLEIC ACIDS USING MONOLAYERS
IN BAMDAD, CYNTHIA, SHARON, MA, UNITED STATES
YU, CHANGJUN, PASADENA, CA, UNITED STATES
PI US 2003087228 A1 20030508
AI US 1999-245105 A1 19990127 (9)
PRAI US 1998-84425P 19980506 (60)
US 1998-84509P 19980506 (60)
DT Utility
FS APPLICATION
LREP FLEHR HOHBACH TEST ALBRITTON & HERBERT, ROBIN M SILVA, SUITE 3400 FOUR EMBARCADERO CENTER, SAN FRANCISCO, CA, 941114187
CLMN Number of Claims: 38
ECL Exemplary Claim: 1
DRWN 50 Drawing Page(s)
LN.CNT 4573
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention is directed to the electronic detection of nucleic acids using self-assembled monolayers.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 5 OF 22 USPATFULL on STN
AN 2003:268164 USPATFULL
TI Arrays of proteins and methods of use thereof
IN Wagner, Peter, Belmont, CA, United States
Ault-Riche, Dana, Palo Alto, CA, United States
Nock, Steffen, Redwood City, CA, United States
Itin, Christian, Menlo Park, CA, United States
PA Zyomyx, Incorporated, Hayward, CA, United States (U.S. corporation)
PI US 6630358 B1 20031007
AI US 2000-570363 20000512 (9)
RLI Division of Ser. No. US 1999-353215, filed on 14 Jul 1999, now abandoned
Continuation-in-part of Ser. No. US 1998-115455, filed on 14 Jul 1998
DT Utility
FS GRANTED
EXNAM Primary Examiner: Chin, Christopher L.
LREP Townsend, Townsend & Crew LLP

09567863

CLMN Number of Claims: 3
ECL Exemplary Claim: 1
DRWN 9 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 2367
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Protein arrays for the parallel, in vitro screening of biomolecular activity are provided. Methods of using the protein arrays are also disclosed. On the arrays, a **plurality** of different proteins, such as different members of a single protein family, are immobilized on one or more organic thinfilms on the substrate surface. The protein arrays are particularly useful in drug development, proteomics, and clinical diagnostics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 6 OF 22 USPATFULL on STN
AN 2003:203373 USPATFULL
TI Electronic methods for the detection of analytes utilizing monolayers
IN Yu, Changjun, Pasadena, CA, United States
PA Clinical Micro Sensors, Inc., Pasadena, CA, United States (U.S. corporation)
PI US 6600026 B1 20030729
AI US 1999-306653 19990506 (9)
RLI Continuation of Ser. No. US 1998-135183, filed on 17 Aug 1998
PRAI US 1998-84652P 19980506 (60)
US 1998-84509P 19980506 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Riley, Jezia
LREP Silva, Robin M., Kosslak, Renee M., Dorsey & Whitney, LLP
CLMN Number of Claims: 12
ECL Exemplary Claim: 1
DRWN 93 Drawing Figure(s); 41 Drawing Page(s)
LN.CNT 4573
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to the use of self-assembled monolayers with mixtures of conductive oligomers and insulators to detect target analytes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 7 OF 22 USPATFULL on STN
AN 2003:197071 USPATFULL
TI Microdevices for screening biomolecules
IN Wagner, Peter, Belmont, CA, United States
Ault-Riche, Dana, Palo Alto, CA, United States
Nock, Steffen, Redwood City, CA, United States
Itin, Christian, Menlo Park, CA, United States
PA Zyomyx, Inc., Hayward, CA, United States (U.S. corporation)
PI US 6596545 B1 20030722
AI US 1999-353554 19990714 (9)
RLI Continuation-in-part of Ser. No. US 1998-115397, filed on 14 Jul 1998
DT Utility
FS GRANTED
EXNAM Primary Examiner: Chin, Christopher L.
LREP Townsend & Townsend Crew LLP
CLMN Number of Claims: 4
ECL Exemplary Claim: 1
DRWN 9 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 2357
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Devices for the parallel, in vitro screening of biomolecular activity

using miniaturized microfabricated devices are provided. The biomolecules immobilized on the surface of the devices of the present invention include proteins, polypeptides, polynucleotides, polysaccharides, phospolipids, and related unnatural polymers of **biological** relevance. These devices are useful drug development, functional proteomics and clinical diagnostics and are preferably used for the parallel screening of families of related proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 8 OF 22 USPATFULL on STN
AN 2002:307830 USPATFULL
TI Movement of biomolecule-coated nanoparticles in an electric field
IN Mirkin, Chad A., Wilmette, IL, UNITED STATES
Letsinger, Robert L., Wilmette, IL, UNITED STATES
Mucic, Robert C., Glendale, CA, UNITED STATES
Storhoff, James J., Evanston, IL, UNITED STATES
Elghanian, Robert, Chicago, IL, UNITED STATES
Taton, Thomas Andrew, Chicago, IL, UNITED STATES
Garimella, Viswanadham, Evanston, IL, UNITED STATES
Li, Zhi, Evanston, IL, UNITED STATES
Park, So-Jung, Evanston, IL, UNITED STATES
PI US 2002172953 A1 20021121
AI US 2001-927777 A1 20010810 (9)
RLI Continuation-in-part of Ser. No. US 2001-820279, filed on 28 Mar 2001, PENDING Continuation-in-part of Ser. No. US 2001-760500, filed on 12 Jan 2001, PENDING Continuation-in-part of Ser. No. US 2000-603830, filed on 26 Jun 2000, PENDING Continuation-in-part of Ser. No. US 1999-344667, filed on 25 Jun 1999, GRANTED, Pat. No. US 6361944 Continuation-in-part of Ser. No. US 1999-240755, filed on 29 Jan 1999, ABANDONED Continuation-in-part of Ser. No. WO 1997-US12783, filed on 21 Jul 1997, UNKNOWN
PRAI US 1996-31809P 19960729 (60)
US 2000-176409P 20000113 (60)
US 2000-200161P 20000426 (60)
US 2000-192699P 20000328 (60)
US 2000-254392P 20001208 (60)
US 2000-255235P 20001211 (60)
US 2000-224631P 20000811 (60)
DT Utility
FS APPLICATION
LREP Emily Miao, McDonnell Boehnen Hulbert & Berghoff, 32nd Floor, 300 S. Wacker Drive, Chicago, IL, 60606
CLMN Number of Claims: 598
ECL Exemplary Claim: 1
DRWN 64 Drawing Page(s)
LN.CNT 11435
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides methods of detecting a nucleic acid. The methods comprise contacting the nucleic acid with one or more types of particles having oligonucleotides attached thereto. In one embodiment of the method, the oligonucleotides are attached to nanoparticles and have sequences complementary to portions of the sequence of the nucleic acid. A detectable change (preferably a color change) is brought about as a result of the hybridization of the oligonucleotides on the nanoparticles to the nucleic acid. The invention also provides compositions and kits comprising particles. The invention further provides methods of synthesizing unique nanoparticle-oligonucleotide conjugates, the conjugates produced by the methods, and methods of using the conjugates. In addition, the invention provides nanomaterials and nanostructures comprising nanoparticles and methods of nanofabrication utilizing nanoparticles. Finally, the invention provides a method of separating a

selected nucleic acid from other nucleic acids.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 9 OF 22 USPATFULL on STN
AN 2002:206239 USPATFULL
TI Arrays of proteins and methods of use thereof
IN Wagner, Peter, Belmont, CA, UNITED STATES
Ault-Riche, Dana, Palo Alto, CA, UNITED STATES
Nock, Steffen, Redwood City, CA, UNITED STATES
Itin, Christian, Menlo Park, CA, UNITED STATES
PI US 2002110933 A1 20020815
AI US 2002-113964 A1 20020329 (10)
RLI Continuation of Ser. No. US 1999-353215, filed on 14 Jul 1999, ABANDONED
Continuation-in-part of Ser. No. US 1998-115455, filed on 14 Jul 1998, GRANTED, Pat. No. US 6406921
DT Utility
FS APPLICATION
LREP Zyomyx, 26101 Research Road, Hayward, CA, 94545
CLMN Number of Claims: 39
ECL Exemplary Claim: 1
DRWN 8 Drawing Page(s)
LN.CNT 2275
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Protein arrays for the parallel, in vitro screening of biomolecular activity are provided. Methods of using the protein arrays are also disclosed. On the arrays, a **plurality** of different proteins, such as different members of a single protein family, are immobilized on one or more organic thinfims on the substrate surface. The protein arrays are particularly useful in drug development, proteomics, and clinical diagnostics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 10 OF 22 USPATFULL on STN
AN 2002:206238 USPATFULL
TI Microdevices for screening biomolecules
IN Wagner, Peter, Belmont, CA, UNITED STATES
Ault-Riche, Dana, Palo Alto, CA, UNITED STATES
Nock, Steffen, Redwood City, CA, UNITED STATES
Itin, Christian, Menlo Park, CA, UNITED STATES
PI US 2002110932 A1 20020815
AI US 2002-112982 A1 20020329 (10)
RLI Continuation of Ser. No. US 1999-353554, filed on 14 Jul 1999, PENDING
Continuation-in-part of Ser. No. US 1998-115397, filed on 14 Jul 1998, PENDING
DT Utility
FS APPLICATION
LREP Zyomyx, 26101 Research Road, Hayward, CA, 94545
CLMN Number of Claims: 45
ECL Exemplary Claim: 1
DRWN 8 Drawing Page(s)
LN.CNT 2363
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods and devices for the parallel, in vitro screening of biomolecular activity using miniaturized microfabricated devices are provided. The biomolecules immobilized on the surface of the devices of the present invention include proteins, polypeptides, polynucleotides, polysaccharides, phospolipids, and related unnatural polymers of **biological** relevance. These devices are useful drug development, functional proteomics and clinical diagnostics and are preferably used for the parallel screening of families of related proteins.

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CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 11 OF 22 USPATFULL on STN
AN 2002:12264 USPATFULL
TI AMPLIFICATION OF NUCLEIC ACIDS WITH ELECTRONIC DETECTION
IN KAYYEM, JON FAIZ, PASADENA, CA, UNITED STATES
BAMDAD, CYNTHIA, SAN MARINO, CA, UNITED STATES
PI US 2002006643 A1 20020117
AI US 1999-238351 A1 19990127 (9)
RLI Continuation of Ser. No. US 1998-14304, filed on 27 Jan 1998, GRANTED, Pat. No. US 6063573 Continuation of Ser. No. US 1998-135183, filed on 17 Aug 1998, PENDING
PRAI US 1998-84425P 19980506 (60)
US 1998-84509P 19980506 (60)
US 1996-28102P 19961009 (60)
US 1998-73011P 19980129 (60)
DT Utility
FS APPLICATION
LREP FLEHR HOHBACH TEST ALBRITTON & HERBERT, SUITE 3400, FOUR EMBARCADERO CENTER, SAN FRANCISCO, CA, 941114187
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN 60 Drawing Page(s)
LN.CNT 5702
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to compositions and methods useful in the detection of nucleic acids using a variety of amplification techniques, including both signal amplification and target amplification. Detection proceeds through the use of an electron transfer moiety (ETM) that is associated with the nucleic acid, either directly or indirectly, to allow electronic detection of the ETM using an electrode.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 12 OF 22 USPATFULL on STN
AN 2002:3837 USPATFULL
TI Mixed-bed **solid phase** and its use in the isolation of nucleic acids
IN Smith, Craig E., Oregon, WI, UNITED STATES
Holmes, Diana L., Crystal Lake, IL, UNITED STATES
Simpson, Daniel J., Middleton, WI, UNITED STATES
Katzhendler, Jehoshua, Jerusalem, ISRAEL
Bitner, Rex M., Cedarburg, WI, UNITED STATES
Grosch, Josephine C., Mazomainie, WI, UNITED STATES
PA Promega Corporation., Madison, WI, UNITED STATES (U.S. corporation)
PI US 2002001812 A1 20020103
US 6376194 B2 20020423
AI US 2001-912045 A1 20010724 (9)
RLI Division of Ser. No. US 1999-312139, filed on 14 May 1999, GRANTED, Pat. No. US 6270970
DT Utility
FS APPLICATION
LREP MICHAEL BEST & FRIEDRICH, LLP, ONE SOUTH PINCKNEY STREET, P O BOX 1806, MADISON, WI, 53701
CLMN Number of Claims: 62
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 2532
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Mixed-bed solid phases are provided, with methods for using such solid phases to isolate target nucleic acids, such as plasmid DNA, chromosomal

DNA, RNA, or nucleic acids generated by enzymatic amplification from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. The mixed-bed solid phases of this invention are mixtures of at least two different solid phases, each of which has a capacity to bind to the target nucleic acid under different solution conditions, and the capacity to release the nucleic acid under similar elution conditions. By exchanging solution conditions according to the methods of this invention, one can remove contaminants from the target nucleic acid bound to the mixed-bed **solid phase**, then elute the target nucleic acid in an elution buffer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 13 OF 22 USPATFULL on STN
AN 2002:290788 USPATFULL
TI Arrays of proteins and methods of use thereof
IN Wagner, Peter, Belmont, CA, United States
Ault-Riche, Dana, Palo Alto, CA, United States
Nock, Steffen, Redwood City, CA, United States
Itin, Christian, Menlo Park, CA, United States
PA Zyomyx, Incorporated, Hayward, CA, United States (U.S. corporation)
PI US 6475808 B1 20021105
AI US 1999-353215 19990714 (9)
RLI Continuation-in-part of Ser. No. US 1998-115455, filed on 14 Jul 1998
DT Utility
FS GRANTED
EXNAM Primary Examiner: Chin, Christopher L.
LREP Hager, Alicia J., Heinkel, Gregory L.
CLMN Number of Claims: 3
ECL Exemplary Claim: 1
DRWN 9 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 2339
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Protein arrays for the parallel, in vitro screening of biomolecular activity are provided. Methods of using the protein arrays are also disclosed. On the arrays, a **plurality** of different proteins, such as different members of a single protein family, are immobilized on one or more organic thinfilms on the substrate surface. The protein arrays are particularly useful in drug development, proteomics, and clinical diagnostics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 14 OF 22 USPATFULL on STN
AN 2001:170870 USPATFULL
TI Reduction of nonspecific hybridization by using novel base-pairing schemes
IN Collins, Mark L., Walnut Creek, CA, United States
Horn, Thomas, Berkeley, CA, United States
Sheridan, Patrick J., San Leandro, CA, United States
Warner, Brian D., Martinez, CA, United States
Urdea, Michael S., Alamo, CA, United States
PI US 2001026918 A1 20011004
AI US 2000-752213 A1 20001228 (9)
RLI Division of Ser. No. US 1998-115566, filed on 14 Jul 1998, GRANTED, Pat. No. US 6232462 Continuation of Ser. No. US 1997-794153, filed on 3 Feb 1997, GRANTED, Pat. No. US 5780610 Continuation of Ser. No. US 1995-435547, filed on 5 May 1995, ABANDONED Continuation of Ser. No. US 1994-298073, filed on 30 Aug 1994, GRANTED, Pat. No. US 5681702
DT Utility
FS APPLICATION
LREP Dianne E. Reed, REED & ASSOCIATES, 3282 Alpine Road, Portola Valley, CA,

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94028
CLMN Number of Claims: 27
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 1779
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods are provided for substantially reducing background signals encountered in nucleic acid hybridization assays. The method is premised on the elimination or significant reduction of the phenomenon of nonspecific hybridization, so as to provide a detectable signal which is produced only in the presence the target polynucleotide of interest. In addition, a novel method for the chemical synthesis of isoguanosine or 2'-deoxy-isoguanosine is provided. The invention also has applications in antisense and aptamer therapeutics and drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 15 OF 22 USPATFULL on STN
AN 2001:134201 USPATFULL
TI pH dependent ion exchange matrix and method of use in the isolation of nucleic acids
IN Smith, Graig E., Oregon, WI, United States
Holmes, Diana L., Crystal Lake, IL, United States
Simpson, Daniel J., Middleton, WI, United States
Katzenhendler, Jehoshua, Jerusalem, Israel
Bitner, Rex M., Cedarburg, WI, United States
Grosch, Josephine C., Mazomainie, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 2001014650 A1 20010816
AI US 2001-813077 A1 20010320 (9)
RLI Division of Ser. No. US 1999-312172, filed on 14 May 1999, PENDING
DT Utility
FS APPLICATION
LREP MICHAEL BEST & FRIEDRICH, LLP, ONE SOUTH PINCKNEY STREET, P O BOX 1806, MADISON, WI, 53701
CLMN Number of Claims: 100
ECL Exemplary Claim: 1
DRWN 4 Drawing Page(s)
LN.CNT 2094
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB pH dependent ion exchange matrices are provided, with methods for making such matrices, and methods for using such matrices to isolate a target nucleic acid, such as plasmid DNA, chromosomal DNA, or RNA from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. Each pH dependent ion exchange matrix of this invention comprises at least two different ion exchange functional groups, one of which is capable of acting as an anion exchanger at a first pH, and the other of which is capable of acting as a cation exchanger at a second, higher pH. The matrix has an overall neutral charge in a pH range between the first and second pH. The pH dependent ion exchange matrices of the present invention are designed to bind to the target nucleic acid at a pH wherein the overall charge of the matrix is positive, and to release the target nucleic acid as the pH of the surrounding solution is increased. The target nucleic acid can be released from the pH dependent matrix in little or no salt and at about a neutral pH. The matrices and methods of this invention enable one to isolate a target nucleic acid in very few steps, without the use of hazardous chemicals. Target nucleic acids isolated using the pH dependent ion exchange matrices according to the present invention can be used immediately without further extraction or isolation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 16 OF 22 USPATFULL on STN
AN 2001:191265 USPATFULL
TI pH dependent ion exchange matrix and method of use in the isolation of nucleic acids
IN Smith, Craig E., Oregon, WI, United States
Holmes, Diana L., Crystal Lake, IL, United States
Simpson, Daniel J., Middleton, WI, United States
Katzenhendler, Jehoshua, Jerusalem, IL, United States
Bitner, Rex M., Cedarburg, WI, United States
Grosch, Josephine C., Mazomainie, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 6310199 B1 20011030
AI US 1999-312172 19990514 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Marschel, Ardin H.
LREP Michael Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.
CLMN Number of Claims: 70
ECL Exemplary Claim: 1
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 2054
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB pH dependent ion exchange matrices are provided, with methods for making such matrices, and methods for using such matrices to isolate a target nucleic acid, such as plasmid DNA, chromosomal DNA, or RNA from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. Each pH dependent ion exchange matrix of this invention comprises at least two different ion exchange functional groups, one of which is capable of acting as an anion exchanger at a first pH, and the other of which is capable of acting as a cation exchanger at a second, higher pH. The matrix has an overall neutral charge in a pH range between the first and second pH. The pH dependent ion exchange matrices of the present invention are designed to bind to the target nucleic acid at a pH wherein the overall charge of the matrix is positive, and to release the target nucleic acid as the pH of the surrounding solution is increased. The target nucleic acid can be released from the pH dependent matrix in little or no salt and at about a neutral pH. The matrices and methods of this invention enable one to isolate a target nucleic acid in very few steps, without the use of hazardous chemicals. Target nucleic acids isolated using the pH dependent ion exchange matrices according to the present invention can be used immediately without further extraction or isolation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 17 OF 22 USPATFULL on STN
AN 2001:147681 USPATFULL
TI Kits for cell concentration and lysate clearance using paramagnetic particles
IN Bitner, Rex M., Cedarburg, WI, United States
Smith, Craig E., Oregon, WI, United States
White, Douglas H., Madison, WI, United States
Butler, Braeden L., Madison, WI, United States
Sankbeil, Jacqui, Edgerton, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 6284470 B1 20010904
AI US 2000-645133 20000824 (9)
RLI Division of Ser. No. US 1999-475958, filed on 30 Dec 1999
Continuation-in-part of Ser. No. US 1998-64449, filed on 22 Apr 1998, now patented, Pat. No. US 6194562
PRAI US 1999-134156P 19990514 (60)

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DT Utility
FS GRANTED
EXNAM Primary Examiner: Guzo, David
LREP Frenchick, Grady J., King, Karen B.Michael Best & Friedrich LLP
CLMN Number of Claims: 5
ECL Exemplary Claim: 1
DRWN 6 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 1473
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods are disclosed for using paramagnetic particles to concentrate or harvest cells. Methods are also disclosed for **clearing** a **solution** of disrupted **biological** material, such as a lysate of cells or a homogenate of mammalian tissue. Methods are also disclosed for using paramagnetic particles to isolate target nucleic acids, such as RNA or DNA, from a **solution cleared** of disrupted **biological** material using the same type or a different type of paramagnetic particle. Kits are also disclosed for use with the various methods of the present invention. Nucleic acids isolated according to the present methods and using the present kits are suitable for immediate use in downstream processing, without further purification.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 18 OF 22 USPATFULL on STN
AN 2001:125743 USPATFULL
TI Mixed-bed **solid phase** and its use in the isolation of nucleic acids
IN Smith, Craig E., Oregon, WI, United States
Holmes, Diana L., Crystal Lake, IL, United States
Simpson, Daniel J., Middleton, WI, United States
Katzenhendler, Jehoshua, Jerusalem, IL, United States
Bitner, Rex M., Cedarburg, WI, United States
Grosch, Josephine C., Mazomainie, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 6270970 B1 20010807
AI US 1999-312139 19990514 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Jones, W. Gary; Assistant Examiner: Chakrabarti, Arun
LREP Micheal Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.
CLMN Number of Claims: 19
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 2302
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Mixed-bed solid phases are provided, with methods for using such solid phases to isolate target nucleic acids, such as plasmid DNA, chromosomal DNA, RNA, or nucleic acids generated by enzymatic amplification from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. The mixed-bed solid phases of this invention are mixtures of at least two different solid phases, each of which has a capacity to bind to the target nucleic acid under different solution conditions, and the capacity to release the nucleic acid under similar elution conditions. By exchanging solution conditions according to the methods of this invention, one can remove contaminants from the target nucleic acid bound to the mixed-bed **solid phase**, then elute the target nucleic acid in an elution buffer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 19 OF 22 USPATFULL on STN

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AN 2001:71696 USPATFULL
TI Reduction of nonspecific hybridization by using novel base-pairing schemes
IN Collins, Mark L., Walnut Creek, CA, United States
Horn, Thomas, Berkeley, CA, United States
Sheridan, Patrick J, San Leandro, CA, United States
Warner, Brian D., Martinez, CA, United States
Urdea, Michael S., Alamo, CA, United States
PA Bayer Corporation, East Walpole, MA, United States (U.S. corporation)
PI US 6232462 B1 20010515
AI US 1998-115566 19980714 (9)
RLI Continuation of Ser. No. US 1997-794153, filed on 3 Feb 1997, now patented, Pat. No. US 5780610 Continuation of Ser. No. US 1995-435547, filed on 5 May 1995, now abandoned Continuation of Ser. No. US 1994-298073, filed on 30 Aug 1994, now patented, Pat. No. US 5681002, issued on 28 Oct 1997
DT Utility
FS Granted
EXNAM Primary Examiner: Fredman, Jeffrey
LREP Reed, Dianne E., Hartrum, J. ElinReed & Associates
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1867
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods are provided for substantially reducing background signals encountered in nucleic acid hybridization assays. The method is premised on the elimination or significant reduction of the phenomenon of nonspecific hybridization, so as to provide a detectable signal which is produced only in the presence the target polynucleotide of interest. In addition, a novel method for the chemical synthesis of isoguanosine or 2'-deoxy-isoguanosine is provided. The invention also has applications in antisense and aptamer therapeutics and drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 20 OF 22 USPATFULL on STN
AN 1998:82885 USPATFULL
TI Reduction of nonspecific hybridization by using novel base-pairing schemes
IN Collins, Mark L., 2991 Santos La., Apt. 301, Walnut Creek, CA, United States 94507
Horn, Thomas, 876 Spruce St., Berkeley, CA, United States 94707
Sheridan, Patrick J., 2008 Horne St., San Leandro, CA, United States 94577
Warner, Brian D., 1034 Alhambra Ave., Martinez, CA, United States 94553
Urdea, Michael S., 100 Bunce Meadow Rd., Alamo, CA, United States 94507
PI US 5780610 19980714
AI US 1997-794153 19970203 (8)
RLI Continuation of Ser. No. US 1995-435547, filed on 5 May 1995, now abandoned which is a continuation of Ser. No. US 1994-298073, filed on 30 Aug 1994, now patented, Pat. No. US 5681702
DT Utility
FS Granted
EXNAM Primary Examiner: Zitomer, Stephanie W.; Assistant Examiner: Fredman, Jeffrey
LREP Barovsky, Kenneth, Goldman, Kenneth M., Blackburn, Robert P.
CLMN Number of Claims: 7
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1844
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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AB Methods are provided for substantially reducing background signals encountered in nucleic acid hybridization assays. The method is premised on the elimination or significant reduction of the phenomenon of nonspecific hybridization, so as to provide a detectable signal which is produced only in the presence the target polynucleotide of interest. In addition, a novel method for the chemical synthesis of isoguanosine or 2'-deoxy-isoguanosine is provided. The invention also has applications in antisense and aptamer therapeutics and drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 21 OF 22 USPATFULL on STN
AN 1998:4133 USPATFULL
TI Process for separating and recovering an anionic dye from an aqueous solution
IN Rogers, Robin, DeKalb, IL, United States
Horwitz, E. Philip, Naperville, IL, United States
Bond, Andrew H., Tallahassee, FL, United States
PA Arch Development Corp., Chicago, IL, United States (U.S. corporation)
Northern Illinois University, DeKalb, IL, United States (U.S. corporation)
PI US 5707525 19980113
AI US 1996-655251 19960605 (8)
RLI Continuation-in-part of Ser. No. US 1995-477330, filed on 7 Jun 1995, now patented, Pat. No. US 5603834 And Ser. No. US 1995-478382, filed on 7 Jun 1995
DT Utility
FS Granted
EXNAM Primary Examiner: Therkorn, Ernest G.
LREP Welsh & Katz, Ltd.
CLMN Number of Claims: 12
ECL Exemplary Claim: 12
DRWN 7 Drawing Figure(s); 7 Drawing Page(s)
LN.CNT 1981
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A solid/liquid phase process for the separation and recovery of an anionic dye from an aqueous solution is disclosed. The **solid phase** comprises separation particles having surface-bonded poly(ethylene glycol) groups, whereas the aqueous solution from which the anionic dye molecules are separated contains a poly(ethylene glycol) liquid/liquid biphase-forming amount of a dissolved lyotropic salt. After contact between the aqueous solution and separation particles, the anionic dye is bound to the particles. The bound anionic dye molecules are freed from the separation particles by contacting the anionic dye-bound particles with an aqueous solution that does not contain a poly(ethylene glycol) liquid/liquid biphase-forming amount of a dissolved lyotropic salt to form an aqueous anionic dye solution whose anionic dye concentration is preferably higher than that of the initial dye-containing solution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 22 OF 22 USPATFULL on STN
AN 97:99156 USPATFULL
TI Reduction of nonspecific hybridization by using novel base-pairing schemes
IN Collins, Mark L., Walnut Creek, CA, United States
Horn, Thomas, Berkeley, CA, United States
Sheridan, Patrick J., San Leandro, CA, United States
Warner, Brian D., Martinez, CA, United States
Urdea, Michael S., Alamo, CA, United States
PA Chiron Corporation, Emeryville, CA, United States (U.S. corporation)

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PI US 5681702 19971028
AI US 1994-298073 19940830 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Elliott, George G.; Assistant Examiner: Fredman, Jeffrey
LREP Reed & Associates, Goldman, Kenneth M., Blackburn, Robert P.
CLMN Number of Claims: 8
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1852
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods are provided for substantially reducing background signals encountered in nucleic acid hybridization assays. The method is premised on the elimination or significant reduction of the phenomenon of nonspecific hybridization, so as to provide a detectable signal which is produced only in the presence the target polynucleotide of interest. In addition, a novel method for the chemical synthesis of isoguanosine or 2'-deoxy-isoguanosine is provided. The invention also has applications in antisense and aptamer therapeutics and drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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(FILE 'HOME' ENTERED AT 10:27:08 ON 11 NOV 2003)

FILE 'BIOSIS, MEDLINE, CAPLUS, WPIDS, USPATFULL' ENTERED AT 10:27:41 ON 11 NOV 2003
L1 5 S CLEAR? (3A) SOLUTION AND DISRUPTED BIOLOGICAL MATERIAL
L2 2 S L1 AND SILAN?
L3 10363 S CLEAR? (4A) SOLUTION? AND BIOLOGICAL
L4 19 S L3 AND SILICA SOLID
L5 3 S L4 AND SILAN?
L6 6012 S L3 AND SILICA
L7 1 S L6 AND SILANE LIGANDS
L8 524 S L6 AND SILAN?
L9 35 S L8 AND CHAOTROP?
L10 25 S L9 AND SOLID PHASE
L11 22 S L10 AND PLURALITY
L12 22 DUP REM L11 (0 DUPLICATES REMOVED)

=> s l12 and silan? (6a) solid phase
L13 4 L12 AND SILAN? (6A) SOLID PHASE

=> d l13 bib abs 1-4

L13 ANSWER 1 OF 4 USPATFULL on STN
AN 2002:3837 USPATFULL
TI Mixed-bed **solid phase** and its use in the isolation of nucleic acids
IN Smith, Craig E., Oregon, WI, UNITED STATES
Holmes, Diana L., Crystal Lake, IL, UNITED STATES
Simpson, Daniel J., Middleton, WI, UNITED STATES
Katzhendler, Jehoshua, Jerusalem, ISRAEL
Bitner, Rex M., Cedarburg, WI, UNITED STATES
Grosch, Josephine C., Mazomainie, WI, UNITED STATES
PA Promega Corporation., Madison, WI, UNITED STATES (U.S. corporation)
PI US 2002001812 A1 20020103
US 6376194 B2 20020423
AI US 2001-912045 A1 20010724 (9)

09567863

RLI Division of Ser. No. US 1999-312139, filed on 14 May 1999, GRANTED, Pat. No. US 6270970
DT Utility
FS APPLICATION
LREP MICHAEL BEST & FRIEDRICH, LLP, ONE SOUTH PINCKNEY STREET, P O BOX 1806, MADISON, WI, 53701
CLMN Number of Claims: 62
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 2532
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Mixed-bed solid phases are provided, with methods for using such solid phases to isolate target nucleic acids, such as plasmid DNA, chromosomal DNA, RNA, or nucleic acids generated by enzymatic amplification from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. The mixed-bed solid phases of this invention are mixtures of at least two different solid phases, each of which has a capacity to bind to the target nucleic acid under different solution conditions, and the capacity to release the nucleic acid under similar elution conditions. By exchanging solution conditions according to the methods of this invention, one can remove contaminants from the target nucleic acid bound to the mixed-bed **solid phase**, then elute the target nucleic acid in an elution buffer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 2 OF 4 USPATFULL on STN
AN 2001:191265 USPATFULL
TI pH dependent ion exchange matrix and method of use in the isolation of nucleic acids
IN Smith, Craig E., Oregon, WI, United States
Holmes, Diana L., Crystal Lake, IL, United States
Simpson, Daniel J., Middleton, WI, United States
Katzenhendler, Jehoshua, Jerusalem, IL, United States
Bitner, Rex M., Cedarburg, WI, United States
Grosch, Josephine C., Mazomainie, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 6310199 B1 20011030
AI US 1999-312172 19990514 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Marschel, Ardin H.
LREP Michael Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.
CLMN Number of Claims: 70
ECL Exemplary Claim: 1
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 2054
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB pH dependent ion exchange matrices are provided, with methods for making such matrices, and methods for using such matrices to isolate a target nucleic acid, such as plasmid DNA, chromosomal DNA, or RNA from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. Each pH dependent ion exchange matrix of this invention comprises at least two different ion exchange functional groups, one of which is capable of acting as an anion exchanger at a first pH, and the other of which is capable of acting as a cation exchanger at a second, higher pH. The matrix has an overall neutral charge in a pH range between the first and second pH. The pH dependent ion exchange matrices of the present invention are designed to bind to the target nucleic acid at a pH wherein the overall charge of the matrix is positive, and to release the target nucleic acid as the pH of the surrounding solution is increased. The target nucleic acid can be released from the pH dependent

matrix in little or no salt and at about a neutral pH. The matrices and methods of this invention enable one to isolate a target nucleic acid in very few steps, without the use of hazardous chemicals. Target nucleic acids isolated using the pH dependent ion exchange matrices according to the present invention can be used immediately without further extraction or isolation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 3 OF 4 USPATFULL on STN
AN 2001:134201 USPATFULL
TI pH dependent ion exchange matrix and method of use in the isolation of nucleic acids
IN Smith, Graig E., Oregon, WI, United States
Holmes, Diana L., Crystal Lake, IL, United States
Simpson, Daniel J., Middleton, WI, United States
Katzenhendler, Jehoshua, Jerusalem, Israel
Bitner, Rex M., Cedarburg, WI, United States
Grosch, Josephine C., Mazomainie, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 2001014650 A1 20010816
AI US 2001-813077 A1 20010320 (9)
RLI Division of Ser. No. US 1999-312172, filed on 14 May 1999, PENDING
DT Utility
FS APPLICATION
LREP MICHAEL BEST & FRIEDRICH, LLP, ONE SOUTH PINCKNEY STREET, P O BOX 1806, MADISON, WI, 53701
CLMN Number of Claims: 100
ECL Exemplary Claim: 1
DRWN 4 Drawing Page(s)
LN.CNT 2094
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB pH dependent ion exchange matrices are provided, with methods for making such matrices, and methods for using such matrices to isolate a target nucleic acid, such as plasmid DNA, chromosomal DNA, or RNA from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. Each pH dependent ion exchange matrix of this invention comprises at least two different ion exchange functional groups, one of which is capable of acting as an anion exchanger at a first pH, and the other of which is capable of acting as a cation exchanger at a second, higher pH. The matrix has an overall neutral charge in a pH range between the first and second pH. The pH dependent ion exchange matrices of the present invention are designed to bind to the target nucleic acid at a pH wherein the overall charge of the matrix is positive, and to release the target nucleic acid as the pH of the surrounding solution is increased. The target nucleic acid can be released from the pH dependent matrix in little or no salt and at about a neutral pH. The matrices and methods of this invention enable one to isolate a target nucleic acid in very few steps, without the use of hazardous chemicals. Target nucleic acids isolated using the pH dependent ion exchange matrices according to the present invention can be used immediately without further extraction or isolation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 4 OF 4 USPATFULL on STN
AN 2001:125743 USPATFULL
TI Mixed-bed **solid phase** and its use in the isolation of nucleic acids
IN Smith, Craig E., Oregon, WI, United States
Holmes, Diana L., Crystal Lake, IL, United States
Simpson, Daniel J., Middleton, WI, United States

09567863

Katzenhendler, Jehoshua, Jerusalem, IL, United States
Bitner, Rex M., Cedarburg, WI, United States
Grosch, Josephine C., Mazomainie, WI, United States
PA Promega Corporation, Madison, WI, United States (U.S. corporation)
PI US 6270970 B1 20010807
AI US 1999-312139 19990514 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Jones, W. Gary; Assistant Examiner: Chakrabarti, Arun
LREP Micheal Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.
CLMN Number of Claims: 19
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 2302
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Mixed-bed solid phases are provided, with methods for using such solid phases to isolate target nucleic acids, such as plasmid DNA, chromosomal DNA, RNA, or nucleic acids generated by enzymatic amplification from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. The mixed-bed solid phases of this invention are mixtures of at least two different solid phases, each of which has a capacity to bind to the target nucleic acid under different solution conditions, and the capacity to release the nucleic acid under similar elution conditions. By exchanging solution conditions according to the methods of this invention, one can remove contaminants from the target nucleic acid bound to the mixed-bed **solid phase**, then elute the target nucleic acid in an elution buffer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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